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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/681,330

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Chi Man Charles Ung

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10/17/2006

PATENT ADMINISTRATOR
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EXAMINER

EISEN, ALEXANDER

ART UNIT

PAPER NUMBER

2629

DATE MAILED: 10/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/681,330

Applicant(s)

UNG ET AL.

Examiner

Alexander Eisen

Art Unit

2629

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-89 is/are pending in the application.
- 4a) Of the above claim(s) 80-89 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5, 6, 19-30, 33, 36-48 and 75-79 is/are rejected.
- 7) ☒ Claim(s) 4, 7-18, 31, 32, 34, 35 and 49-74 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of restriction requirements in the reply filed on 7/27/06 is acknowledged. The traversal is on the ground(s) that "a search of the art for one group of claims will necessarily include a search of the art for the other group of claims. It is believed that the burden on the Examiner to examine all claims in a single application is less than the burden on the Applicants/public to prosecute/search more than one application/patent". This is not found persuasive because the inventions of groups I and II are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different designs, modes of operation, and effects (MPEP § 802.01 and § 806.06). In the instant case, the different inventions I and II specifically require different features, which mutually exclude the capability of the two to operate together, the invention I requires two reflective elements residing in joint sides of a corner and the invention one requires only one reflective element and non-reflective material on all other sides of a touch surface. Because these inventions are independent or distinct for the reasons given above (see MPEP § 808.02), restriction for examination purposes as indicated is proper.

The requirement is still deemed proper and is therefore made FINAL.

2. Claims 80-89 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention II, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 7/27/06.

Art Unit: 2629

3. The Applicant is reminded that should the current application be advanced to a final action, a complete reply to the final action must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-3, 5 and 6 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Knox et al., hereinafter Knox, US 5,734,375.

With respect to claim 1 Knox discloses an apparatus (FIG. 1) for detecting a pointer within a region of interest comprising a first reflective element 70 extending along a first side of said region of interest and reflecting light towards said region of interest; a second reflective element 72 extending along a second side of said region of interest and reflecting light towards said region of interest, said second side being joined to said first side to define a first corner; a non-reflective region generally in the plane of at least one of said first and second reflective elements adjacent said first corner; and at least one imaging device 76 capturing images of said region of interest including reflections from said first and second reflective elements.

As pertaining to claim 2, as can be seen from FIG. 1 said non-reflective region extends in the planes of both of said first and second reflective elements.

Art Unit: 2629

As pertaining to claim 3, said first reflective element extends only partially along said first side and wherein said second reflective element extends only partially along said second side thereby to define a gap (can be clearly seen in FIG. 1) in said first and second reflective elements at said first corner.

As pertaining to claims 5 and 6, as can be seen from FIG. 3, said non-reflective region (alongside the reflective element 70) extends only in the plane of one of said first and second reflective elements (plane of 70 and 72 define a corner, but only the element 72 reaches the corner without leaving a gap); and said one reflective element 70 extends only partially along the respective side of said region of interest thereby to define a gap in said one reflective element at said first corner.

6. Claims 1, 19, 20, 36, 38, 43, 44 are rejected under 35 U.S.C. 102(b) as being anticipated by Walter, US 4,107,522.

With respect to claim 1 Walter discloses an apparatus (FIGS. 3 or 5) for detecting a pointer within a region of interest comprising a first reflective element 12 extending along a first side of said region of interest and reflecting light towards said region of interest; a second reflective element 13 extending along a second side of said region of interest and reflecting light towards said region of interest, said second side being joined to said first side to define a first corner; a non-reflective region 15 generally in the plane of at least one of said first and second reflective elements adjacent said first corner; and at least one imaging device 17 for capturing images of said region of interest including reflections from said first and second reflective elements (see also col. 3, line 66 – col. 4, line 8).

As pertaining to claims 19 and 20, as can be seen from FIGS. 1-5, said at least one first and second reflective element includes multiple pairs of reflective surfaces arranged generally at right angles to one another with each pair taking a V- configuration thereby to define a corrugated reflective surface.

As pertaining to claims 36 and 38, at least one of, or both, said first and second reflective element (13) include a generally planar reflective surface (see FIGS. 1-5).

As to claim 43, the apparatus includes a single imaging device 17.

As pertaining to claim 44, the imaging device 17 looks across the region of interest from a second corner diagonally opposite the first one.

7. Claims 46-48, 75 and 76 are rejected under 35 U.S.C. 102(b) as being anticipated by Segen, US 5,484,966.

8. With respect to claims 46 and 75 Segen discloses an apparatus (FIG.1) for detecting a pointer within a region of interest comprising a generally rectangular touch surface having an active sub-area defining said region of interest; a first reflective element 102 extending along a first side of said touch surface and reflecting light towards said region of interest; a second reflective element 104 extending along a second side of said touch surface and reflecting light towards said region of interest, said second side being joined to said first side at a first corner of said touch surface; and a detecting device 110 for detecting a pointer within said region of interest and reflections of said pointer appearing in said first and second reflective elements and determining the location of said pointer within said region of interest, said active sub-area being sized to inhibit said detecting device from detecting a pointer within said region of interest that

Art Unit: 2629

merges with one or more of said reflections to an extent that said pointer and one or more reflections cannot be resolved (col. 8, ll. 39-53).

9. As pertaining to claim 47, the active sub-area 106 is delineated by a rectangular margin about the periphery of the touch surface.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 21-30, 33, 37, 39, 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walter.

While Walter is not specific of how the corrugated reflective elements 12 are made, with respect to claims 21 and 22 it would be well within the skill of those of ordinary skill in the art at the time when the invention was made that it can be realized by depositing a reflecting coating on a corrugated surface. And as can be seen from the FIGS. 1-5 the thickness of corrugated material indeed defines opposed major surfaces, one of said major surfaces defining said corrugated surface and another of said major surfaces being generally planar.

As pertaining to claim 23, the corrugated surface is nearest to the region of interest.

As pertaining to claim 24, it is understood that the material can be one of a light transmissive and non-transmissive material without bringing any unexpected result, since it is covered by a reflective coating and the only reflection function of it is used.

Art Unit: 2629

As pertaining to claim 25, as can be seen from FIG. 3, both reflective element use corrugated reflective surfaces 12.

As pertaining to claims 26-30 and 33, see comments to the claims above, which discuss the similar subject matter.

As pertaining to claims 37 and 39 it is understood that the reflective surface 13 is designed (adjusted) to reflect light toward the imaging device 17, rendering it adjustable at least during manufacturing procedures.

As pertaining to claim 40, both surfaces include flat reflective surfaces (e.g. corrugated surface is made of multiple flat surfaces).

12. Claim 45 is rejected under 35 U.S.C. 103(a) as being unpatentable over Walter in view of Hirabayashi, US 2001/0022579.

Walter does not specifically disclose that the imaging device includes an image sensor having an active pixel sub-array.

Hirabayashi teaches a similar device having partially reflective side in the area of interest wherein an imaging device includes an image sensor having an active pixel sub-array.

It would have been obvious to one of ordinary skill in the art at the time when the invention was made that the imaging device taught by Hirabayashi can be suitably used in the apparatus of Walter without undue experimentation or bringing about any unexpected result.

13. Claims 77-79 are rejected under 35 U.S.C. 103(a) as being unpatentable over Segen in view of Walter.

While Segen discloses an apparatus with reflective surfaces, it is noted that the reflective surfaces are not taught to be arranged of multiple reflective surfaces in V-configuration.

Walter teaches a similar device having corrugated reflecting surfaces arranged at generally right angles in V-configuration.

It would have been obvious to one of ordinary skill in the art at the time when the invention was made in view of Walter to modify the reflective surfaces of Segen arranged at generally right angles in V-configuration because it would allow to reduce the adverse effect of ambient light (Walter; col. 4, lines 30-32).

Allowable Subject Matter

14. Claims 4, 7-18, 31-32, 34-35 and 49-74 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

15. The following is a statement of reasons for the indication of allowable subject matter: all objected above claims contain an allowable subject matter since no prior art has been found by the examiner, which alone or in combination, suggest the combination of the limitations of the cited claims with their respective parent claims.

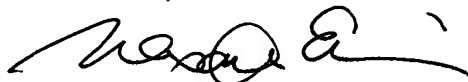
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander Eisen whose telephone number is (571) 272-7687. The examiner can normally be reached on M-F (9:00-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz can be reached on (571) 272-3638. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2629

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Alexander Eisen
Primary Examiner
Art Unit 2629

14 October 2006